Our Docket No.: 98-179/1C - 1496.00065

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Jackson L. Ellis et al.

Application No.:   09/183,694   Examiner: Park, I.

Filed: October 30, 1998   Art Group: 2182

For: COMMAND QUEUEING ENGINE

I hereby certify that this letter, the response or amendment attached hereto are being deposited with the United States Postal Service as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on _May 21, 2003_ .

By: _Mary Donna Berkley_
Mary Donna Berkley

REPLY BRIEF

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Dear Sir:

Appellants submit, in triplicate, the following Reply Brief pursuant to 37 C.F.R. §1.193 for

consideration by the Board of Patent Appeals and Interferences. Please charge any additional fees

or credit any overpayment to our Deposit Account Number 12-2252.

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ARGUMENTS IN RESPONSE TO EXAMINER'S ANSWER

Response to Argument

Grouping of the Claims

The Appeal Brief includes a table showing how each of nine arguments is allocated among the five groups.[1] . The table shows that each group is based upon a unique set of the arguments. Contrary to the assertion by the Examiner, no arguments have been made by the Appellants that merely point out differences in what the claims cover.[2] As shown by the table, group 2 depends on arguments 4 and 5 while groups 1 and 3-5 do not. Therefore, group 2 may be found patentable over the references even if groups 1, 3, 4 and/or 5 are not. Group 3 depends on arguments 6 and 7 while groups 1, 2 and 5 do not. Therefore, group 3 may be found patentable over the references even if groups 1, 2 and/or 5 are not. Group 4 depends on argument 8 while groups 1-3 and 5 do not. Therefore group 4 may be found patentable over the references even if groups 1, 2, 3 and/or 5 are not. Group 5 depends on argument 9 while groups 1-4 do not. Therefore, group 5 may be found patentable over the reference even if groups 1, 2, 3 and/or 4 are not.

Examiner's Response

The Examiner asserts that claim 21 does not clearly describe which element re-orders a plurality of commands.[3] The language for claim 21 has remained unchanged since the July 27, 2001 Amendment when the language was established in former claim 2. The Examiner has passed on

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[1] Appeal Brief, October 22, 2002, page 18, Table I.

[2] Examiner's Answer, April 18, 2003, page 3, paragraph 7.

[3] Examiner's Answer, April 18, 2003, page 8, lines 11-12.

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multiple opportunities to question the language during prosecution and thus should not be raising the issue now for the first time.[4] Regardless, claim 21 provides "wherein the data controller minimizes interrupts to the processor by re-ordering a plurality of commands". As such, the language of claim 21 is clear.

The Examiner asserts that Krakirian teaches a hard disk controller 204 receiving and parsing access requests into a command queue. In particular, the Examiner cites column 15, lines 13-33, column 17, lines 45-47 and column 12, lines 32-43 of Krakirian as alleged evidence that the hard disk controller 204 re-orders commands then interrupts a microprocessor 206. Column 15, lines 13-22 of Krakirian read:

> The instruction at location 24h facilitates a test for a valid queue tag. In SCSI-2 it is possible for an initiator to send many commands (each having a queue ID tag) to a target in a burst of commands without waiting for each command to be executed. For example, an initiator may send a first read command, followed by a second read command, followed by a third read command. If the data to be read by the first command is located on an outer track of a disk, the data to be read by the second command is located on an inner track of the disk and the data to be read by the third command is located on a center track of the disk, the target may reorder the commands first command-third command-second command for execution so that the head of the disk seeks from the outer track, to the center track, to the inner track, thereby speeding the seek operations and reducing disk drive response time. Multiple commands are therefore "queued" in the target provided that no two outstanding commands received from a single initiator have the same queue ID tag. If a received command for a given initiator is determined to have a unique queue tag with respect to all outstanding queue tags for that initiator, then the received command is said to have been validated.

Column 17, lines 44-47 of Krakirian read:

> If autowrite and ESP are both enabled, the SCSI interface portion 211 is able to distinguish between writes of contiguous data and writes of non-contiguous data.

Column 12, lines 32-43 of Krakirian read:

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[4] M.P.E.P., Eighth Edition, February 2003, §1208.01.

Location 12h contains the receive command instruction. The sequencer initiates operation of the "instruction state machine" which in turn initiates operation of the "CDB parsing state machine" of the sequencer block 221. The CDB parsing state machine parses the command, loads information from different fields of the command into corresponding other CFIFO locations and then generates an interrupt to the microprocessor to notify the microprocessor 206 that a new command has been received and parsed. If a data transfer is already in progress, instruction flow proceeds to location 16h as illustrated, otherwise instruction flow proceeds to location 13h.

In contrast to the Examiner's assertion, none of the above cited text of Krakirian mentions the hard disk controller 204. Furthermore, the command queue mentioned by the Examiner appears to be the CFIFO block 217 of Krakirian. However, FIG. 4 of Krakirian shows the CFIFO 217 block 217 is part of the SCSI interface portion 211 and not the hard disk controller 204. As such, the Examiner's assertion that the hard disk controller 204 of Krakirian receives and parses access requests into a command queue is an improper interpretation of Krakirian.

The Examiner asserts that Krakirian teaches maskable interrupts and thus the microprocessor 206 of Krakirian "is not required to be interrupted for the each command."[5] Such an assertion is merely a conclusory statement. The 35 U.S.C. §102 rejection for claim 21 requires the reference to disclose or suggest every claim limitation.[6] The Examiner is simply speculating on how the reference might be modified to meet the claim limitation instead of providing evidence that the Krakirian in fact discloses or suggests every claim limitation. Therefore, the Examiner's conclusory statement does not establish that Krakirian discloses or suggests a data controller that minimizes

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[5] Examiner's Answer, April 18, 2003, page 9, lines 10-11.

[6] *Brown v. 3M*, 60 USPQ2d 1375, 1376 (Fed. Cir. 2001) citing *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383, 58 USPQ2d 1286, 1291 (Fed. Cir. 2001); *Scripps Clinic & Research Found. v. Genentech Inc.*, 927 F.2d 1565, 18 U.S.P.Q.2d 1001, 1010 (Fed. Cir. 1991) (Emphasis added by Appellant).

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interrupts to a processor as presently claimed. As such, the Examiner has failed to prove that Krakirian anticipates claim 21.

The Examiner asserts that multiple threads are inherent as a creation of additional threads would "happen again and again from time to time".[7] Inherency requires certainty of results, not mere possibility.[8] The Examiner has not provided any evidence or explanation why a creation of multiple threads is a certainty. If the plurality of commands from claim 26 is defined as multiple sets of commands with each set being received at a different time, no evidence or explanation has been provided why multiple threads are created from the multiple sets instead of a single thread being continued as each new set is received. Therefore, a single thread may be created for the plurality of commands regardless of the timing. If the creation of a new thread is defined by the arrival of one set of commands, a first thread would be created from a first set of commands, a second thread would be created from a second set of commands, a third thread would be created from a third set of commands, and so on. Therefore, only one thread may be created for each plurality (set) of commands. As such, the Examiner's assertion that multiple threads are inherent is erroneous due to an uncertainty of results.

The Examiner asserts that motivation to combine Krakirian and Jones et al. is "for more efficiency in disk accessing."[9] Such a conclusory statement alone is not thorough and searching evidence for motivation. In particular, the Examiner's assertion does not reference Krakirian, Jones

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[7] Examiner's Answer, April 18, 2003, page 9, lines 14-15.

[8] See, e.g., *Ethyl Molded Products Co. v. Betts Package, Inc.*, 9 U.S.P.Q. 2d 1001 (E.D.Ky 1988). See also, In re Oelrich, 666 F.2d 578, 581, 212 USPQ 323, 326 (C.C.P.A. 1981).

[9] Examiner's Answer, April 18, 2003, page 10, lines 1-2.

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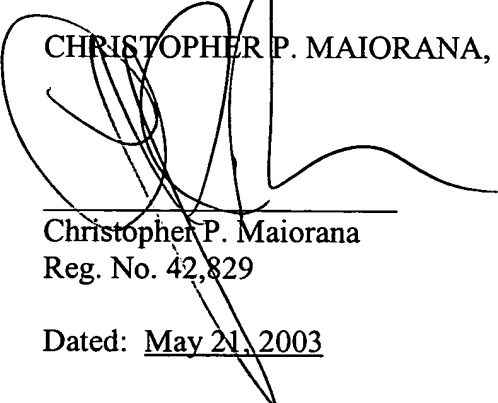Application No.:   1496.00065   5

et al. or knowledge generally available to one of ordinary skill in the art for the alleged motivation. As such, the Examiner has failed to establish a *prima facie* case for obviousness.

CONCLUSION

The assertions that Krakirian discloses or suggests several of the limitations for claim 21 are erroneous interpretations of the reference. The cites into Krakirian do not establish that a hard disk controller 204 of Krakirian anticipates the claim limitations for a data controller of claim 21. The speculation of how Krakirian could be modified to meet the limitations of claim 21 is inappropriate for a 35 U.S.C. §102 rejection. The inherency assertion for claim 26 is incorrect due to an uncertainty of results. Furthermore, the asserted motivation to combine Krakirian and Jones et al. is a conclusory statement lacking any support evidence. Therefore, the assertions made in the Examiner's Answer should be disregarded.

Respectfully submitted,

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Dated: May 21, 2003

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